

	Hits	Search Text	DBs	Time Stamp
1	16	(("4789889") or ("5247375") or ("5250931") or ("5467210") or ("5483082") or ("5576868") or ("5688032") or ("5621556")).PN.	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/17 15:41
2	4	(("6767754") or ("6406946") or ("5742074")).PN.	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/17 15:48
3	7	("4789889" "5247375" "5250931" "5467210" "5483082" "5576868" "5668032").PN.	US- PGPUB; USPAT; USOCR	2004/12/17 15:48
4	0	("6767754").URPN.	USPAT	2004/12/17 15:51
5	8	("4789889" "5247375" "5250931" "5341012" "5467210" "5483082" "5576868" "5668032").PN.	US- PGPUB; USPAT; USOCR	2004/12/17 15:51
6	3	("6406946").URPN.	USPAT	2004/12/17 15:52
7	7	("4789889" "5247375" "5250931" "5467210" "5483082" "5576868" "5668032").PN.	US- PGPUB; USPAT; USOCR	2004/12/17 15:54
8	6	("4789889" "5247375" "5250931" "5467210" "5483082" "5576868").PN.	US- PGPUB; USPAT; USOCR	2004/12/17 15:56

	Hits	Search Text	DBs	Time Stamp
9	8	("5742074").URPN.	USPAT	2004/12/17 15:56
10	69029	"thin film transistor" or tft	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:41
11	27715	"pixel electrode"	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:41
12	65752	"contact hole"	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:42
13	30672	"bus line"	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:42
14	611580	matrix	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:42

	Hits	Search Text	DBs	Time Stamp
15	517	S11 and S12 and S13 and S14 and S15	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:42
16	55	S16 and ((@ad<"19950531") or (@rlad<"19959531"))	US- PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	2004/12/20 09:44

	Type	L #	Hits	Search Text	DBs	Time Stamp
1	IS&R	L1	2	("5182661").PN.	US- PGPUB; USPAT; EPO; JPO; DERWENT ; IBM_TDB	2004/12/20 13:31
2	BRS	L2	1966	"gate bus line"	US- PGPUB; USPAT; EPO; JPO; DERWENT ; IBM_TDB	2004/12/20 13:31
3	BRS	L3	201	2 same (resistor or resistance)	US- PGPUB; USPAT; EPO; JPO; DERWENT ; IBM_TDB	2004/12/20 13:31
4	BRS	L4	78	3 and ((@ad<"19950531") or (@rlad<"19959531"))	US- PGPUB; USPAT; EPO; JPO; DERWENT ; IBM_TDB	2004/12/20 13:31

- **Inquiry**

Click "FI" or "F-term". Or input FI / F-term code to the query box and click Search button.

	Query	
• <u>FI</u>	<input type="text" value="G02F"/>	<input type="button" value="Search"/>
	e.g. : A61K A61K6 C08L27/06 A61K7/46@A A61K7/46,315@A	
• <u>F-term</u>	<input type="text" value="2H089"/>	<input type="button" value="Search"/>
	e.g. : 5B 5B001	

Indication type selection is effective in the lower hierarchies than the FI main group.

Indication Type ☒ List ☐ Target ☐ The same hierarchy

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* * FI Main Group / Facet Selection * *

A main group or Facet contained in "G02F" can be chosen on this screen.
Click on a main group or Facet to display the lower hierarchy.

525	for adoption of full colors	2H091
• 1/1337	Combination with lighting devices	2H091
• 1/13363	. . . . . Birefringent elements, e.g. for optical compensation[7]	2H091
• 1/1337	. . . . . Surface-induced orientation of the liquid crystal molecules, e.g. by alignment layers [5]	2H090
500	Characterized by rubbing	2H090
505	Provided with multiple orientation treatments	2H090
510	Suitable to smectic liquid crystal	2H090
515	Orientation control film composed of inorganic compounds	2H090
520	Orientation control film composed of organic compounds	2H090
525	Imide compound	2H090
530	Silane compound	2H090
• 1/1339	. . . . . Gaskets; Spacers; Sealing of the cell [5]	2H089
500	Gasket and spacer	2H089
505	Cell sealing	2H089
• 1/1341	. . . . . Filling or closing of the cell [5]	2H089
• 1/1343	. . . . . Electrodes [5]	2H092
• 1/1345	. . . . . Conductors connecting electrodes to cell terminals [5]	2H092
• 1/1347	. . . . . Arrangement of liquid crystal layers or cells in which the final condition of one light beam is achieved by the addition of the effects of two or more layers or cells [5]	2H089
• 1/135	. . . . . Liquid crystal cells structurally associated with a photoconducting or a ferro-electric layer, the properties of which can be optically or electrically varied [3]	2H092
• 1/136	. . . . . Liquid crystal cells structurally associated with a semi-conducting layer or substrate, e.g. cells forming part of an integrated circuit (G 02 F 1/135 takes precedence) [5]	2H092
• 1/1362	Active matrix cells	2H092
• 1/1365	with two-terminal switching elements	2H092
• 1/1368	with three-terminal switching elements	2H092
• 1/137	. . . characterised by a particular electro- or magneto-optical effect, e.g. field-induced phase transition, orientation effect, guest-host interaction, dynamic scattering [3]	2H088
500	Effects occurring only in the mixed liquid crystal	2H088
• 1/139	based on alignment effect of liquid crystal while keeping them transparent	2H088
• 1/141	using ferro-electric liquid crystals	2H088
• 1/15	. . . based on electrochromic elements [5]	2K001
501	Antiglare mirror	2K001
502	Light control window	2K001
503	Spectacles	2K001
504	Diaphragm	2K001
505	Characterized by manufacturing method	2K001
506	Other application equipment	2K001

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[Number Search](#)**Applicant, Title of invention, Abstract** — e.g. computer semiconductor

If you use the AND/OR operation, please leave a SPACE between keywords.

One letter word or Stopwords are not searchable.

[AND](#)

AND

[AND](#)

AND

[AND](#)

AND

Date of publication of application — e.g. 19980401 - 19980405

AND

IPC — e.g. D01B7/04 A01C11/02

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[Index Indication](#)[Clear](#)**Text Search**

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[Number Search](#)**Applicant, Title of invention, Abstract** — e.g. computer semiconductor

If you use the AND/OR operation, please leave a SPACE between keywords.

One letter word or **Stopwords** are not searchable.

thin film transistor

AND

AND

contact hole

AND

AND

pixel electrode

AND

AND

Date of publication of application — e.g. 19980401 - 19980405

19930101

-

19950531

AND

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If you use the OR operation, please leave a SPACE between keywords.

G02F 1/136

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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-120790

(43)Date of publication of application : 12.05.1995

(51)Int.Cl.

G02F 1/136
G02F 1/1343
H01L 29/786

(21)Application number : 06-029009

(71)Applicant : KYOCERA CORP

(22)Date of filing : 31.01.1994

(72)Inventor : TANAKA KIYONARI

(30)Priority

Priority number : 05240692 Priority date : 31.08.1993 Priority country : JP

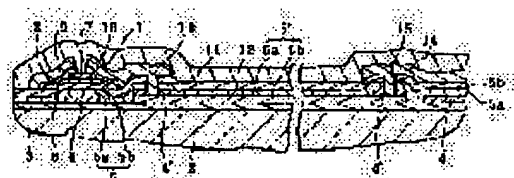
(54) ACTIVE MATRIX SUBSTRATE AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To improve display characteristics by stabilizing the contact resistance of pixel electrodes and drain electrodes and the sheet resistance of the pixel electrodes to a low level without increasing production stages and to prevent the generation of a contact defect by eliminating the penetration defect of contact holes for bringing the drain electrodes into contact with the pixel electrodes.

CONSTITUTION: The parts where the pixel electrodes 12 formed on a transparent substrate 2 come into contact with the drain electrodes 10 of thin-film transistors 1 for pixel driving of a reverse stagger structure are coated with protective films 4' of the same material as the material of the gate electrodes 4.

Thereafter, the pixel electrodes 12 are coated with pixel coating films 5' of the same material as the material of gate insulating film 5. The contact holes 13 penetrating the pixel coating films 5' and protective films 4' covering these contact parts are formed. Thereafter, the drain electrodes 10 are brought into contact with the pixel electrodes 12 via the contact-holes 13 by



PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-056190

(43)Date of publication of application : 03.03.1995

(51)Int.Cl.

G02F 1/136
G02F 1/1333
H01L 29/786
H01L 21/336

(21)Application number : 05-200862

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 12.08.1993

(72)Inventor : MATSUO MINORU

(54) THIN-FILM TRANSISTOR AND ITS PRODUCTION

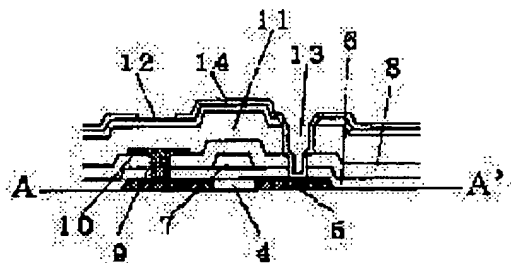
(57)Abstract:

PURPOSE: To make it possible to improve the shape of fine contact holes, to obtain good contact characteristics and to facilitate fine processing by opening the contact holes in drain parts and forming pixel electrodes.

CONSTITUTION: Source wirings are formed via a first interlayer insulating film 8 in the upper part of the gate wirings of thin-film transistors(TFTs) and a second interlayer insulating film 11 is formed in the upper part of the source wirings. A third interlayer insulating film 13 is formed in the upper part of the second interlayer insulating film 11 and the pixel electrodes are formed in the upper part of the third interlayer insulating film 12.

The contact between the pixel electrodes and the drain parts 5 of the TFTs is obtd. by using the contact holes 13

formed which the third interlayer insulating film 12 is isotropically etched and the second interlayer insulating film 11 is anisotropically etched. The second interlayer insulating film 11 is an org. thin film and the third interlayer insulating film 12 is an inorg. thin film. Then, the shapes of the fine contact holes 9 formed in the polyimide film 11 are improved and the good contact characteristics are obtd.



LEGAL STATUS

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-036056

(43)Date of publication of application : 07.02.1995

(51)Int.Cl.

G02F 1/136
G02F 1/1343
H01L 29/78

(21)Application number : 05-157598

(71)Applicant : TOSHIBA CORP

TOSHIBA ELECTRON ENG CORP

(22)Date of filing : 28.06.1993

(72)Inventor : TANAKA HIROHISA

(54) ACTIVE MATRIX TYPE LIQUID CRYSTAL DISPLAY DEVICE

(57)Abstract:

PURPOSE: To conduct the connection of thin-film transistors(TFTs) and pixel electrodes by low-resistance electrical contact and physical contact having a large process margin without increasing the number of stages and further, opening contact holes of pad parts by selective etching with a substrate.

CONSTITUTION: This liquid crystal display device has the plural TFTs arranged in a matrix form on a substrate 1 and the pixel electrodes 13 which are disposed via insulating layers 11 in the upper parts of the TFTs and signal lines 9 and are electrically connected to the respective TFTs. The TFTs and the pixel electrodes 13 are electrically connected to each other via multilayered wiring layers 17 including at least one wiring layer

selected from the wiring layers of metal having at least $\leq 5 \times 10^{-6} \Omega \text{cm}$ electric resistivity or its alloy. The display device is provided with the TFT array substrate having the multilayered wiring layers 17, of which the uppermost layer is connected to the pixel electrodes 13 and the lowermost layer to the high-concn. impurity regions 6 of the TFTs and having the multilayered wiring layers 17, of which the uppermost layer consists of a conductive layer consisting of metals exclusive of the low-resistivity metal or its alloy layer and a conductive layer permitting selective etching with the low-resistivity metal or its alloy layer.

